







Thus, the combination of Britton ('184) and Rasmussen ('364) does not disclose, teach or even suggest the laminates as currently claimed. Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

#### **Claim 77**

The Examiner contends as follows:

Regarding claim 77, Britton ('184) teaches wherein the strands in the respective arrays are in contact with one another at their crossing points and are of a polymer such as to be directly laminated to each other at the crossing points (col. 3, l. 8 "spot welded" strands and col. 3, l. 17 "fused laminate").

Applicant repeats the arguments above regarding Britton ('184) here. Applicant further notes the language cited in Britton ('184), but the layer being spot welded or fuse laminated are the full layers, the discontinuous layers, *e.g.*, strands, are completely encased in adhesive and not just the fibers so that the spot welds or fusion points are in the adhesive surround in the fibers not in fibers. The machine is designed to operate with films and not with strings of fibers, which it would have to do in order for the bonding to occur between the fibers themselves at their intersections. This conclusion is further buttressed because the fibers are nylon type 126 having a melting temperature above 400°F, while the adhesive layers are PCV (176°F melting point), natural rubber curing at 220°F range or other adhesives. Moreover, nylon's fiber strength is adversely affected by melting. Because Britton ('184) is directed to coated fabric layers, the layer would be significantly weakened if the fibers themselves were bonded directly to each other at fiber intersections.

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

#### **Claims 83 and 96**

The Examiner contends as follows:

Regarding claims 83 and 96, Britton ('184) obviously teaches wherein the lamination strength at the crossing points of the thin strands of the arrays is at least 40 g cm<sup>-1</sup> and a lamination strength in the strand-free regions of the cross-laminate is not more than 50% of the lamination strength at said crossing points of the strands thereof, as measured by a peel test carried out on narrow specimens of the cross-laminate at a velocity of about 1 mm sec<sup>-1</sup>, and the lamination strength in the strand-free regions is at the highest 75% of the bonding strength between the strands at the crossing points, as measured by the peel test since a structure with an equivalent structure would also have the same lamination strength (col. 2, l. 42-58).



surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

#### **Claim 88**

The Examiner contends as follows:

Regarding claim 88, Britton ('184) teaches wherein the second surface layer includes an adhesion modifying material (col. 2, ll. 42-58).

The phrase "to establish a **blocking between the contacting mutually facing strand-free regions thereof**" in claim 88, lines 2-3 is not given any patentable weight since the applicant is introducing non-structural **functional language** into the product claims (see MPEP 2173 (q)) and (See MPEP 2173.05(g)).

Applicant repeats the arguments above regarding Britton ('184) here. Regardless of the surface coating, Britton ('184) does not disclose, teach or suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

#### **Claim 89**

The Examiner contends as follows:

Regarding claim 89, Britton ('184) obviously teaches wherein the first surface layer on at least one of the films A and B comprises at least two of the arrays of strands, and the strands of the differing arrays being interspersed with one another as such material has a appearance depending upon how viewed or processed (col. 2, ll. 25-58).

The phrase "**at least one of the two arrays being formed of a polymer material differing in appearance from another of the two arrays**" in claim 89, lines 4-5 is not given any patentable weight since the applicant is introducing non-structural **functional language** into the product claims (see MPEP 2173 (q)) and (See MPEP 2173.05(g)).

Applicant repeats the arguments above regarding Britton ('184) here. Again, Britton ('184) does not disclose films have strands disposed on their surfaces. The Britton ('184) are fully surrounded by adhesive – coated – incapable of directly fiber-to-fiber or strand-to-strand bonding. Britton ('184) simply does not disclose, teach or suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

### **Claim 93**

The Examiner contends as follows:

Regarding **claim 93**, Britton ('184) teaches a lamination layer introduced between the films A and B to laminate the films in the sandwich relation (see FIG-4).

Applicant repeats the arguments above regarding Britton ('184) here. Regardless of the lamination layer, Britton ('184) does not disclose, teach or suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

8. The 35 U.S.C. 103 rejections of claims 79-82, 86, 90, 94-95, 97-98 and 100 as being unpatentable Britton (US 4,454,184) in view of Rasmussen (US 4,039,364) and Lappala (US 2,851,389) are repeated for the reasons of record in the Office Action mailed 2 November 2006, page 11, paragraph 15.

### **Claim 79**

The Examiner contends as follows:

Regarding **claim 79**, Britton ('184) and Rasmussen (364) teach the laminate discussed above, however, fail to expressly disclose wherein the thickness of the strands in the first surface layer of each of the films A and B is not greater than 20% of the thickness of the respective film.

However, Lappala ('389) teaches that any suitable diameter strand may be used (See col. 2, l. 45, any suitable diameter can be used), which clearly changes the films/laminate ratio. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to select a strand with a diameter that provides the above thickness ratio as taught by Lappala ('389) for the purpose of providing a laminate that is light and strong (col. 1, ll. 25-28).

Applicant repeats the arguments above regarding Britton ('184) here. Again, the combination of Britton (184) and Rasmussen (364) does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*). The inclusion of Lappala ('389) does nothing to repair the deficiencies in either Britton (184), Rasmussen (364) or their combination. Therefore, the new combination also does not disclose, teach or even









Applicant repeats the arguments above regarding Britton ('184) here. Again, the combination of Britton (184) and Rasmussen (364) does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*). The inclusion of Lappala ('389) does nothing to repair the deficiencies in either Britton (184), Rasmussen (364) or their combination. Therefore, the new combination also does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

#### Claim 94

The Examiner contends as follows:

Regarding claim 94, Britton ('184) and Rasmussen (364) teach the laminate discussed above, however fail to expressly disclose wherein the thickness of the strands in the first surface layer of each of the films A and B is not greater than 10% of the thickness of the respective film.

However, Lappala ('389) teaches that any suitable diameter strand may be used (See col. 2, I. 45, any suitable diameter can be used), which clearly changes the films/laminate ratio. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to select a strand with a diameter that provides the above thickness ratio as taught by Lappala ('389) for the purpose of providing a laminate that is light and strong (col. 1, II. 25-28).

Applicant repeats the arguments above regarding Britton ('184) here. Again, the combination of Britton (184) and Rasmussen (364) does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*). The inclusion of Lappala ('389) does nothing to repair the deficiencies in either Britton (184), Rasmussen (364) or their combination. Therefore, the new combination also does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

#### Claim 95





Regarding claim 98, Britton ('184) and Rasmussen (364) teach the laminate discussed above, however fail to expressly disclose wherein the first surface layer on each of the films A and B constitutes at the highest 5% of the volume of the corresponding film.

However, Lappala (389) teaches that any suitable diameter strand may be used (See col. 2, l. 45, any suitable diameter can be used), which clearly changes the volume. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to select a strand with a diameter that provides the above volume as taught by Lappala ('389) for the purpose of providing a laminate that is light and strong (col. 1, ll. 25-28).

Applicant repeats the arguments above regarding Britton ('184) here. Again, the combination of Britton (184) and Rasmussen (364) does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*). The inclusion of Lappala ('389) does nothing to repair the deficiencies in either Britton (184), Rasmussen (364) or their combination. Therefore, the new combination also does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

9. The 35 U.S.C. 103 rejections of claims 87, 91-92 and 99 as being unpatentable over Britton (US 4,454,184) in view of Rasmussen (US 4,039,364), Velazquez (US 5,614,297) and Cederblad et al. (US 6,204,207) are repeated for the reasons of record in the Office Action mailed 2 November 2006, page 16, paragraph 16.

#### Claim 87

The Examiner contends as follows:

Regarding claim 87, Britton ('184) and Rasmussen (364) teach the laminate discussed above, and Rasmussen (364) teaches the laminate wherein each of the films A and B of the main layer is selected from HDPE, LLDPE or a blend of the two (col. 13, ll. 3-7), and the strands in the first surface layers of the films is selected from a polymer which consists essentially of a copolymer of ethylene (col. 13, ll. 11-30), however, fail to expressly disclose wherein the continuous second surface layer is formed mainly of LLDPE in admixture with 5 - 25% of a copolymer of ethylene having a melting point or a melting range within the temperature range of 50 - 80°C, the strands having a melting point or a melting range within the temperature range of 50 - 100°C.



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that of the films as taught by Cederblad ('207) in Britton ('184) in order to produce a laminate with firm and light bonds.

Applicant repeats the arguments above regarding Britton ('184) here. Again, the combination of Britton (184) and Rasmussen (364) does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*). The inclusion of Velazquez (US 5,614,297) and Cederblad et al. (US 6,204,207) do nothing to repair the deficiencies in either Britton (184), Rasmussen (364) or their combination. Therefore, the new combination also does not disclose, teach or even suggest disposing the strands on the surface of the films and bonding the films at the intersections of strands of opposing film surfaces, where the strands are angled between the films (intersection in well defined *loci*).

Therefore, Applicant respectfully requests withdrawal of this section 103(a) rejection.

#### NEW REJECTIONS

##### *Claim Rejections - 35 USC § 112*

10. Claims 76-100 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner contends as follows:

There is **insufficient antecedent basis** for the following limitations: "the main direction of orientation in film A" and "the main direction of orientation in film B" in claim 76, line 5, "said films" in claim 76, line 7, "the mutually facing sides" and "said main layers" in claim 76, line 9, "first surface layer" and "its main layer" in claim 76, line 11, "the main layer of each of the films A and B" in claim 76, line 13, "the arrays" in claim 76, line 14, "the two films" in claim 76, lines 14-15, "said second surface layers" in claim 76, line 16, "the lamination strength" in claim 76, lines 16-17, "the strand-free regions thereof" in claim 76, line 17, "the polymer material of the strands" in claim 76, line 18, "the crossing points" in claim 76, lines 18-19, "the strand arrays" in claim 76, line 19, "the strand crossing points" in claim 76, lines 19-20, "the strands", "the respective arrays" and "their crossing points" in claim 77, line 1 of page 4, "the thickness" in claim 79, lines 2, "the thickness" in claim 79, lines 3, "the collective area" in claim 80, line 2, "the area" and "the respective film side" in claim 80, line 3, "the thickness increase" in claim 81, line 1, "the locations" in claim 81, line 2, "the film thickness" in claim 81, lines 2-3, "the distance" in claim 82, line 1, "the center-to-center of adjacent pairs of strands in each array" in claim 82, lines 1-2, "the lamination strength" and "the thin strands" in claim 83, line 2, "the strand-free regions" in claim 83, line 5, "the bonding strength" in claim 83, lines 5-6, "its sides" in claim 84, line 4, on page 5, "said common film A" in claim 84, lines 6-7, on page 5, "the strands thereof" and "the strands of said common film A" in claim 84, line 7, on page 5, "its outer films" in claim 85, line 2,







93, it is noted as discussed above, that Applicant does not claim strands bonded to strands, thus Applicant's argument is not germane to any issue at bar.

18. In response to Applicant's arguments (*p. 21, paras. 3-4 of Applicant's Paper filed 13 April 2007*) that Johnston ('128) does not repair the deficiencies of claim #78, it is noted that Applicant has not provided any analysis to support said conclusion.

19. In response to Applicant's arguments (*p. 21, para. 5 to p. 28, para. 5 of Applicant's Paper filed 13 April 2007*) that Lappala ('389) does not repair the deficiencies of claims 79-82, 86, 90, 94-95, 97-98 and 100, it is noted that Applicant has not provided any analysis to support said conclusions.

20. In response to Applicant's arguments (*p. 29, para. 2 to p. 30, para. 2 of Applicant's Paper filed 13 April 2007*) that Velazquez ('297) and Cederblad ('207) do not repair the deficiencies of claims 91-92 and 99, it is noted that Applicant has not provided any analysis to support said conclusions.

Applicant acknowledges that above statements.

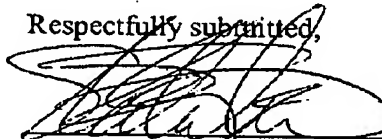
Having fully responded to the Examiner's Final Office Action, Applicant respectfully urges that is application be passed onto allowance.

**The Commissioner is authorized to charge any claim charges or refund any overpayments associated with this response to Deposit Account 501518.**

If it would be of assistance in resolving any issues in this application, the Examiner is kindly invited to contact applicant's attorney Robert W. Strozier at 713.977.7000

Date: August 7, 2007

Respectfully submitted,

  
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